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CONFIDENTIAL

30 January 1957

MEMORANDUM FOR THE RECORD

SUBJECT: Hydrogen Generator, [REDACTED]

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1. On 23 January the undersigned met with [REDACTED]

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[REDACTED]
for the purpose of reviewing the work on the Portable Hydrogen Generator.

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2. [REDACTED] has completed Phase I (laboratory testing and preliminary design analysis) of the program and will submit a report covering that work shortly.

In general, [REDACTED] expects the full sized generator to require about 560 gallons of water (0.01 m NaOH) for the 100# charge of the NaBH_4 (0.56 M/l) and 2.4# of the catalyst CoCl_2 . Generation time for 3700 ft³ of hydrogen at ambient water temperature of 72°F should be between 45 and 60 minutes. During the course of the reaction, the temperature in the generator will rise about 32°C.

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Temperature is the overriding parameter insofar as rate of generation is concerned. For each 5°C increase in the ambient temperature the rate is decreased by about 1/3. Varying the concentration of the CoCl_2 may serve as partial compensation for the temperature effect.

3. It was agreed that [REDACTED] should submit a proposal for Phase I of the program--design of the full scale generator and proof testing. If successful, a third phase would then be entered into which would include preparation of specifications and drawings, and an operator's manual as well as turning over several prototypes.

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Certain severe testing problems will be encountered in Phase II as the cost of a full charge (100 pounds) of NaBH_4 will be somewhere between \$2800 and \$3000. Obviously some sort of compromise testing program will have to be resorted to.

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Original filed in Portable Hydrogen Generator

1 - Chrono

1 - SFH, RDT, JRP

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